

REMARKS

Claims 1-5 are pending in the application. By this Amendment, claims 3 and 5 have been amended. No new matter has been added. It is respectfully submitted that this Amendment is fully responsive to the Office Action dated August 15, 2008.

35 U.S.C. §112 Rejection:

Claims 3 and 5 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

This rejection is respectfully traversed.

More specifically, the Examiner asserts that the term “wear-resistant” recited in claims 3 and 5 is a relative term which renders the claim indefinite. As such, claims 3 and 5 have been amended to delete such language in order to overcome this rejection.

As to the Merits:

As to the merits of this case, the Examiner sets forth the following rejection:

claims 1-5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Smith et al. (USP 2,757,548) in view of Namimatsu et al. (USP 6,216,821). This rejection is respectfully traversed.

Independent claim 1 calls for *a lubricant supply mechanism provided at each axial end of said nut member, ... wherein said lubricant supply mechanism has an application member whose distal end is in sliding contact with said ball rolling groove, said application member being impregnable with lubricant, so that the lubricant is supplied to said ball rolling groove through said application member, and*

wherein an oil lip member is provided in a vicinity of said application member with a predetermined gap provided between itself and said application member in a direction of said ball rolling groove, said oil lip member having a distal end placed in sliding contact with a surface of said ball rolling groove to scrape the lubricant off said ball rolling groove, and said oil lip member being made of a material that is not impregnable with the lubricant.

For example, as illustrated in Fig. 2 of the present application, a lubricant supply mechanism 30 has a plate-shaped application member 31 with a tongue portion placed in sliding contact with a ball rolling groove 11a **provided on the outer periphery of a screw shaft 11.** The application member 31 is positioned approximately parallel to the axial direction of the screw shaft 11. **An oil lip member 32 is positioned in the vicinity of the application member 31 with a predetermined gap provided between itself and the application member 31 in a direction opposite to the rotation direction (direction indicated by the arrow C) of the screw shaft 11.** The oil lip member 32 is installed at a predetermined lead angle θ with respect to the application member 31.

With regard to the primary reference of Smith, the Examiner acknowledges that Smith does not disclose a lubricant supply mechanism and an application member being impregnable with lubricant, as called for in claim 1. Please see the bridging text between pages 3 and 4 of the Office Action.

In other words, the Examiner correctly acknowledges that Smith fails to disclose the feature of claim 1 concerning *a lubricant supply mechanism provided at each axial end of said nut member, ...wherein said lubricant supply mechanism has an application member whose distal end is in sliding contact with said ball rolling groove, said application member being impregnable with lubricant, so that the lubricant is supplied to said ball rolling groove through said application member.*

In addition, the Examiner takes the position that Smith discloses an oil lip member (17, Fig. 3) provided in a vicinity of said application member with a predetermined gap provided between itself and said application member in a direction of said ball rolling groove.

However, it is respectfully submitted that the Examiner is clearly mischaracterizing the teachings of Smith. Specifically, it is submitted that the internal helical threaded like convolutions 17 of Smith clearly fail to constitute *an oil lip member*. Moreover, as noted above, since the Examiner acknowledges that Smith fails to disclose an application member, it is

impossible for Smith to disclose *wherein an oil lip member is provided in a vicinity of said application member with a predetermined gap provided between itself and said application member in a direction of said ball rolling groove, said oil lip member having a distal end placed in sliding contact with a surface of said ball rolling groove to scrape the lubricant off said ball rolling groove, and said oil lip member being made of a material that is not impregnable with the lubricant.*

The Examiner also points out that Smith discloses a mechanism 31 provided at each axial end of the nut member and that the secondary reference of Namimatsu discloses a lubricant supply mechanism 20.

However, according to Smith, reference numeral 31 is merely internal convolutions of the rubber-like material 29 formed along its inner surface adapted to closely fit to the surface of the groove 11. That is, the internal convolutions 31 are clearly not *a lubricant supply mechanism provided at each axial end of said nut member.*

Moreover, while the secondary reference of Namimatsu may disclose a polymer member 20 containing a lubricant mainly in slidable contact with an outer diameter portion of the screw shaft and is mounted to at least any one of both ends of the ball nut, the polymer member 20 is clearly not provided at each axial end of the ball nut 2.

Moreover still, Namimatsu is also silent with regard to *wherein said lubricant supply mechanism has an application member whose distal end is in sliding contact with said ball rolling groove, said application member being impregnable with lubricant, so that the lubricant is supplied to said ball rolling groove through said application member, and*

wherein an oil lip member is provided in a vicinity of said application member with a predetermined gap provided between itself and said application member in a direction of said ball rolling groove, said oil lip member having a distal end placed in sliding contact with a surface of said ball rolling groove to scrape the lubricant off said ball rolling groove, and said oil lip member being made of a material that is not impregnable with the lubricant.

Therefore, even if the references Smith and Namimatsu can be combined in the manner suggested by the Examiner, such combination would still fail to teach of independent claim 1 concerning *a lubricant supply mechanism provided at each axial end of said nut member, ... wherein said lubricant supply mechanism has an application member whose distal end is in sliding contact with said ball rolling groove, said application member being impregnable with lubricant, so that the lubricant is supplied to said ball rolling groove through said application member, and*

wherein an oil lip member is provided in a vicinity of said application member with a predetermined gap provided between itself and said application member in a direction of said ball rolling groove, said oil lip member having a distal end placed in sliding contact with a surface of said ball rolling groove to scrape the lubricant off said ball rolling groove, and said

oil lip member being made of a material that is not impregnable with the lubricant.

That is, even if the references of Smith and Namimatsu can be combined, the combination would fail to teach the configurations of claims 1 and 4 in the present application.

Smith fails to disclose a lubricant supply device and an oil lip member.

While Namimatsu may disclose a lubricant supply device, the polymer member is in sliding contact merely with an outer diameter portion of the screw shaft, and prevents the lubricant attached to the thread groove from being scraped off. Namely, it is clear that Namimatsu has the configuration opposite to the present application.

The Examiner points out that the combination of Smith with Namimatsu can have the same configurations as the present application: “an application member whose distal end is in sliding contact with a ball rolling groove” and “an oil lip member is provided in a vicinity of said application member with a predetermined gap provided between itself and said application member, said oil lip member having a distal end placed in sliding contact with a surface of said ball rolling groove”. However, as noted above, the Examiner makes a contradictory statement.

Application No.: 10/523,368
Art Unit: 3682

Response
Attorney Docket No.: 052102

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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